

BEST AVAILABLE COPYAttorney Docket No. 108298636US
Disclosure No. 01-0427.00/US**REMARKS**

Claims 1, 2, 4, 6-11, 13, 15-17, 19, 21, 23-25, 27-30 and 36-40 are presently pending in this application. The undersigned wishes to thank Examiner Haran for holding a Telephone Interview on 6 October 2004 and requests that this paper constitute the applicant's Interview Summary. During the Telephone Interview, claim 1 was discussed in light of the background section and U.S. Patent Nos. 6,378,200; 6,212,767; and 6,071,371.

The Examiner raised several issues in the Office Action dated 6 July 2004. More specifically, the pending claims were rejected as follows:

(A) Claims 1, 2, 7-9, 10, 11, 16, 17, 23 and 27-30 were rejected under 35 U.S.C. § 103 over the combination of the information in the Background of the present application ("Background Information"); U.S. Patent No. 6,378,200 issued to Lim et al. ("Lim"); U.S. Patent No. 6,212,767 issued to Tandy ("Tandy"); and U.S. Patent No. 6,071,371 issued to Leonard ("Leonard").

(B) Claims 4, 13, 19, 25, 36 and 38-40 were rejected under 35 U.S.C. § 103 over the combination of the Background Information, Lim, Tandy, Leonard, and U.S. Patent No. 6,208,525 issued to Imasu et al. ("Imasu");

(C) Claims 6, 15, 21, 27 and 37 were rejected under 35 U.S.C. § 103 over the combination of the Background Information, Lim, Tandy, Leonard and U.S. Patent No. 5,422,435 issued to Takiar et al. ("Takiar").

A. Response to Section 103 Rejection--Background Information, Lim, Tandy and Leonard

Independent claims 1, 16 and 23 were rejected under Section 103 over the combination of the Background Information, Lim, Tandy and Leonard. This rejection is not proper because Tandy cannot be used to reject the pending claims under 35 U.S.C. § 103. Moreover, two of the remaining references should not be used to support a different Section 103 rejection of the pending claims because they teach away from several claimed elements.

1. Tandy Cannot Be Used to Support a Section 103 Rejection

The present application receives the benefit of 35 U.S.C. § 103(c) because it was filed on 20 February 2002. Tandy qualifies as prior art only under 35 U.S.C. § 102(e), and the subject matter of the present application and Tandy were also owned or subject to an obligation of assignment to Micron Technology, Inc. at the time of the invention of the pending subject matter. The pending claims, therefore, cannot be rejected under 35 U.S.C. § 103 based on Tandy. Thus, the rejection of claims 1, 2, 7-9, 10, 11, 16, 17, 23 and 27-30 over the combination of the Background Information, Lim, Tandy and Leonard should be withdrawn.

2. The Background Information and Leonard Also Teach Away From Several Features of the Pending Claims

The pending claims, moreover, should not be rejected under a different combination of references that includes the Background Information because this reference teaches away from the claims. Claim 1, for example, includes placing a base die on a substrate using a first die attach head of a die attach machine so that bond pads on the front side of the base die face toward the substrate, and stacking a first stacked die onto the backside of the base die using a second head of the same die attach machine before the base die is secured to the substrate in a heating cycle. As discussed in the Telephone Interview, even though the Background Information teaches the subject matter set forth by the Examiner in the Office Action, it also teaches that it is generally necessary to heat the subassembly of the base die and the substrate before moving or otherwise handling the subassembly to avoid displacing the base die (paragraph [0030]). The Background Information further teaches that it was counterintuitive to attach the first stacked die to the base die before securing the base die to the substrate. The Background Information accordingly teaches away from stacking a first stacked die onto the backside of the base die before securing the base die to the substrate in a heating cycle. Claim 1 is accordingly patentable over a combination of references that includes the Background Information.

Leonard also teaches away from a claimed element. In claim 1, for example, the base die is placed on the substrate first, and then the first stacked die is stacked onto

the backside of the base die. Leonard, on the other hand, is directed toward a process of simultaneously attaching a surface-mount die (i.e., a flip-chip die) and a chip-on-board die (i.e., a wire-bond die) to a circuit board. Leonard's primary purpose is to first place both the surface-mount dies 12 and chip-on-board dies 22 on the printed circuit board, and then simultaneously attach these dies to the printed circuit board in a heating cycle. Although Leonard discloses that a single heating cycle can be used to reflow solder under a flip-chip die and cure an adhesive over a wire-bond die, this reference also discloses that this process must be performed in a manner that simultaneously attaches the surface-mount dies and the chip-on-board dies to the printed circuit board. When the teachings of Leonard are taken as a whole, they teach away from the combination of (a) placing a base die on a substrate using a first die attach head of a die attach machine so that the bond pads on the front side of the base die face toward the substrate, and (b) subsequently stacking a first stacked die onto the backside of the base die.

The pending claims are accordingly patentable over different combinations of references including the Background Information and Leonard because these references expressly teach away from several different elements of the claims. Moreover, even though the Background Information and Leonard may disclose a few of the aspects recited in several of the claims, these references also teach away from several claimed elements such that the complete teachings of these references cannot support a rejection of the claims under Section 103. Therefore, the Background Information and Leonard should not be used as a basis for rejecting the pending claims.

B. Response to Section 103 Rejection—Background Information, Lim, Tandy, Leonard and Imasu

The rejection of claims 4, 13, 19, 25, 36 and 30-40 over the combination of the Background Information, Lim, Tandy, Leonard and Imasu under Section 103 is improper for the reasons explained above with respect to claim 1. Therefore, this rejection should also be withdrawn.

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C. Response to Section 103 Rejection—Background Information, Lim, Tandy, Leonard and Takiar

The rejection of claims 6, 15, 21, 27 and 37 over the combination of the Background Information, Lim, Tandy, Leonard and Takiar under Section 103 is also improper for the reasons explained above with respect to claim 1. Therefore, this rejection should also be withdrawn.

In view of the foregoing, the pending claims comply with 35 U.S.C. § 112 and patentably define over the applied art. The applicants request reconsideration of the application and mailing of a Notice of Allowance. If the Examiner has any questions or believes an additional telephone conference would expedite prosecution of this application, the Examiner is encouraged to call the undersigned at (206) 359-3258.

Respectfully submitted,
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